



EnviroGroup Limited
The environmental solutions company

AS0302

September 9, 1999

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STEFANO ORACCI

Bonita Lavelle
Remedial Project Manager
U.S. EPA, Region 8
999 - 18th Street, Suite 500
Mail Code 8EPR-SR
Denver, CO 80202

Re: Draft Vegetable Sampling Design - August 27, 1999
Soil and Vegetable Sampling for Residential Gardens - August 27, 1999 (Rev. #0)
Vasquez Boulevard / Interstate 70 Site (VB/I70)

Dear Ms. Lavelle:

This letter provides comments, submitted on behalf of ASARCO Incorporated, on the documents referenced above and received on September 2, 1999.

GENERAL STUDY OBJECTIVE

We understand the purpose of these plans is to "collect sufficient numbers of home grown garden vegetables from within the study area to determine whether this is a significant exposure pathway, and, if so, determine the level in soil that is associated with unacceptable levels in garden vegetables".

GENERAL CONCERNS

The draft plans appear to be adequate to conduct a conservative risk assessment. However, several aspects of the project plan warrant further consideration. Asarco's general concerns are outlined as follows:

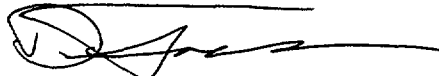
- There is no need to place samples on ice to avoid degradation of the contaminants of potential concern (arsenic and lead). However, to assess risks from ingestion it is necessary to know the relationship between dry weight and fresh plant weight. The plans should be revised to address the determination of fresh weight and dry weight.

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- The mathematical model(s) used to model the uptake of metals by plant may require supplemental data such as soil cation exchange capacity, soil pH, or the amount of organic matter. Therefore, the mathematical model(s) to be used to model metals uptake should be identified so that any necessary additional data can be provided. Similarly, the analytical methods to be used to obtain supplemental data should be identified.
- A composite soil sample should be collected to represent the soil associated with each type of vegetable in each vegetable garden. Similarly, a number of samples of each type of vegetable should be collected and analyzed from each garden and the 95% upper confidence level for the mean determined to provide a upper level value. Alternately, paired discrete soil and vegetable samples should be collected.

Thank you for the opportunity to comment on the draft plans for sampling residential garden soils and vegetables at the VB/I70 Site. Please call if you have any questions.

Sincerely,
EnviroGroup Limited



David J. Folkes, P.E.
Principal

cc: Bob Litle - Asarco
Linda Larsen, Esquire
Joyce Tsuji, PhD - Exponent

